

REMARKS

The present remarks are in response to the Final Office Action of March 30, 2005. Claims 22 and 23 are currently pending. Reconsideration of the application is respectfully requested in view of the following responsive remarks.

In the Final Office Action, the following rejections and allowances were made:

- (1) claim 22 was rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35.U.S.C. 103(a) as obvious over U.S. Pat No. 5,990,202 (hereinafter "Nguyen"); and
- (2) claim 23 was allowed.

Allowance of claim 23

The Applicant wishes to express appreciation to the Examiner for allowance of claim 23.

Product-by-process claims

As a preliminary matter regarding "product-by-process claims," the Examiner has stated that once a rational is provided tending to show that the claimed product appears to be the same or similar to the prior art, the burden shifts to the Applicant to come forward with evidence establishing a nonobvious difference between the claimed product and the prior art product. The Applicant respectfully contends that this is a misstatement of Marosi and Ex parte Gray, both cited by the Examiner. The standard is not that the claimed invention and the prior art products be the same or similar, but that they be identical (Marosi) or either identical or only slightly different (Ex parte Gray) in order to justify a rejection under sections 102 or 103. Mere similarities between structures have never been suggested as the basis for such rejections.

It is the Applicant's position that the burden is upon the Examiner to go on the record and state that the polymeric products of the present invention and the products of Nguyen are identical or only slightly different in order to make out a *prima facie* case. The mere use of product by process claims by an Applicant does not shift the burden to the Applicant in the absence of a reasonable assertion of the identical nature of the claimed and prior art compositions.

Additionally, the Applicant believes that adequate discussion has been provided in the December 8, 2004 communication to allow one skilled in the art to recognize the significant differences between the amphipathic polymer products of claim 22 and the polymeric product of Nguyen. These differences are of a type that clearly shows that the products are not "identical" and are not "only slightly different." The Examiner has not as of yet taken a position as to whether the structure claimed in the present application is identical or only slightly different than that discussed in Nguyen. The Applicants have gone on the record explaining carefully the differences between the claimed copolymer structure as compared to the copolymer structure described Nguyen. Thus, it is the Applicant's position that it is incumbent upon the Examiner to accept or reject these assertions made by the Applicant. If the Examiner rejects these assertions, then reasonable justification for such rejection must be provided in order to move this prosecution along, particularly with respect to justification as to why the structures are identical or are only slightly different.

Rejection under 35 U.S.C. 102(b)

Before discussing the rejections under 35 U.S.C. 102(b), it is thought proper to briefly state what is required to sustain such a rejection. It is well settled that "[a] claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In order to establish anticipation under 35 U.S.C. §102, all elements of the claim must be found in a single reference. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 1606 (1987). In particular, as pointed out by the court in *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1981), *cert denied*, 469 U.S. 851 (1984), "anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference." "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

The Examiner has rejected claim 22 under 35 U.S.C. 102(b) as being anticipated by Nguyen. Nguyen discloses ink jet inks for ink jet printing which include a vehicle, a colorant and a primer core/shell polymer. Upon printing on a

print medium, the primer/colorant combination becomes encapsulated by the durable core/shell polymer. The primer core/shell polymer promotes adhesion of the durable core/shell polymer to the colorant and to disperse the colorant in the ink. Nguyen also discloses a method for preparing the primer core/shell polymer and applications that use the primer core/shell polymer. The only discussion about particle size in Nguyen relates to average particle size, which provides no information about polydispersity.

The Examiner has stated that Nguyen discloses an ink composition that is prepared by the following two step process. Step 1) milling together a carbon black colorant, a durable core/shell polymer, humectants and a surfactant; and step 2) after milling, water is added. The result is an ink composition comprising the primer core/shell polymer particles. The Nguyen reference, however, does not disclose an ink composition comprising amphipathic polymer particles of the claimed invention, nor does it disclose any information about polydispersity of the particles used.

The following steps illustrate the method taught by Nguyen for preparing the core/shell polymer particles: i) mixing hydrophobic and hydrophilic monomers together; ii) adding the mixture to a solution containing a chain transfer agent, surfactant and stabilizer; and iii) preparing a catalyst solution and adding the polymeric mixture to the catalyst solution. As stated therein, this process forms a primer core/shell polymer that is utilized in its ink compositions. This process for forming the core/shell polymer is a typical emulsion polymerization process. Further, Nguyen lacks any mention of utilizing an ATRP mix as a requisite step and polymerization mechanism for forming amphipathic particles.

One skilled in the art would recognize that typical emulsion polymerization processes, as illustrated in Nguyen, are not known to typically form polymers having a polydispersity index within the claimed range, i.e. 1.0-1.2. A polydispersity index of 1.0 to 1.2, as required by claim 22, is considered to be a very uniform polydispersity index that results from the carefully controlled environment of ATRP polymerization. In addition, ATRP processes result in highly predictable molecular weights, molecular weight distributions, controlled structures, etc. One skilled in the art would understand that such highly predictable characteristics of amphipathic particles are, at best, difficult to purposefully achieve with more traditional emulsion processes. As such, emulsion-generated polymeric particles would not possess the structural and

molecular characteristics of ATRP-generated polymeric particles, such as predicable size, uniformity, etc. In other words, polymeric particles prepared from the two processes would not be identical, nor would they be only slightly different. With more traditional emulsion polymerization processes, such as those described in Nguyen, the polydispersity is typically greater than 1.5, and more probably, greater than 2.0. This principle is widely known in the emulsion polymerization art. Accordingly, Applicant submits that the ink composition disclosed in the Nguyen reference differs from the ink composition as claimed in claim 22, as there is no teaching or suggestion that the core/shell polymer used in Nguyen would have a polydispersity index that even approaches the polydispersity index range of claim 22. Thus, the two compositions cannot be identical or only slightly different. As a result, the presently claimed invention is not anticipated by the cited reference, and the Applicant respectfully requests that this rejection be withdrawn.

Rejection under 35 U.S.C. 103(a)

Before discussing the obviousness rejections herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing some motivation in a prior art reference to modify that reference, or combine that reference with multiple references, to teach all the claim limitations in the instant application. Applicant respectfully asserts the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in this rejection.

Applicant submits that claim 22 is not *prima facie* obvious in view of Nguyen. As mentioned, Nguyen recites inks compositions which include a vehicle, a colorant, and a primer core/shell polymer. Nguyen also discloses a method for preparing the primer core/shell polymer and applications that use the primer core/shell polymer. Further, Nguyen teaches average particles sizes of the primer core/shell polymer; however, there is no mention of polydispersity. The polydispersity index (PDI) varies depending on the process used to form the particles. One skilled in the art would recognize that an ATRP process would result in a more uniform polydispersity index than a more typical emulsion polymerization processes, as illustrated in Nguyen. A

polydispersity range from 1.0 to 1.2 indicates very consistent polymer chains, which results from a more controlled environment typical of an ATRP process. As a result of a more controlled process, ATRP provide more predictable molecular weights, molecular weight distribution and more uniform shapes of polymer particles. In contrast, typical emulsion polymerization processes such as those utilized by Nguyen tend to be more random, and result in higher polydispersity indexes, e.g., >1.5 or >2.0. Thus, Nguyen fails to teach or motivate one skilled in the art to modify the ink composition to include the missing element of the presently claimed invention, i.e. amphipathic polymer particles having a PDI of about 1-1.2. Without such a suggestion for the modification, a *prima facie* case of obviousness cannot stand. As a result, claim 22 can not be *prima facie* obvious in view of Nguyen. Therefore, Applicant respectfully requests that this rejection be withdrawn.


CONCLUSION

In view of the foregoing, Applicant believes that claim 22 presents allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone Susan E. Heminger at (650) 236-2738 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 28 day of June 2005.

Respectfully submitted,



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